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TREATMENT OF ENDOMETRITIS.

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## TREATMENT OF ENDOMETRITIS.

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The existence of endometritis without more or less metritis is decidedly a question in the minds of many, and I believe that all gynæcologists who admit that there is such a disease as metritis also admit that it is always associated with a certain amount of endometritis. Without entering into a discussion on these points we will assume that there is such a disease as endometritis where, if the endometrium is not the only structure that is the seat of the inflammation, it is primarily affected and in many instances the most important tissue involved.

The subject will be more intelligently considered if the anatomy of the endometrium is first looked into.

There has been a long discussion between anatomists as to whether the endometrium is or is not a true mucous membrane. If it is one it is of a peculiar nature in that the epithelial layer is thicker in places than in any other mucous membrane in the body, and that its derma is thin and has no sharp line of demarcation between itself and the adjoining inner muscular layer of the uterus; bundles of muscular fiber radiate from one into the other so that the two are irregularly interlaced together, and the inner muscular layer of the uterus has some of the characteristics of an extensively hypertrophied muscularis mucosæ. It contains a large number of glands (utricular glands) which extend throughout the entire thickness of the membrane and end in *culs-de-sac*. Formerly these glands were supposed to enter the muscular substance of the uterus, but now this is generally regarded as erroneous; but their dilated extremities are imbedded in the derma which, as has been stated, is firmly attached to the muscular layer of the uterus. This anatomical fact is of importance to remember when the treatment of endometritis is considered. As the cervix is reached the membrane becomes thinner and less supplied with glands. In the

cervical canal it is thrown into folds, thus giving a large surface. The glands of the cervix (Nabothian follicles) secrete a tenacious substance.

During the menstrual flow there is marked hyperæmia of the endometrium, resulting in hæmorrhage from it and excessive secretion from the glands, associated with exfoliation of quite a portion of the epithelial layer, which is rapidly replaced during the interval.

The treatment of inflammatory diseases of the endometrium is not new; as I was able to point out in an article read before the New York State Medical Society, February 2, 1892, in which the statement is made that Aëtius, who lived in Alexandria (500 A. D.), speaks of the use of the speculum; describes minutely the sponge tent and intra-uterine medication; mentions the intra-uterine use of ointments, pencils, and caustics of many kinds, which shows that for a long time the Egyptian physicians had been in the habit of treating inflammations of the uterus. These precise methods seem to have been lost during the dark ages, and their revival was slow. In the first recorded cases we find that the unfortunate patients were treated by the most heroic "antiflogistic" measures. Then came a long list of careful scientific observers, as Bennett, Wright, Tilt, Sims, Byford, Chapman, and many others, till the present time has evolved a treatment that to a certain extent differs from that which has preceded—possibly due to the recognition of the importance that micro-organisms of one kind or another play in the ætiology and course of endometritis, and the necessity of an intelligent application of the principles of antisepsis and asepsis, together with the application of general surgical principles to the treatment of this most important malady.

It is impossible to so classify endometritis, excepting in the most general way, as to include all of the possible forms of the disease. In fact, every case is, to a certain extent, a law unto itself. From a pathological standpoint it has been classified as acute and chronic catarrhal, croupous, tubercular, and syphilitic; but, to facilitate description, we will divide the disease according to its location and intensity as follows:

I. Affecting the cervix:

1. Acute.
2. Chronic.

II. Affecting the entire endometrium, including that of the cervix and body:

1. Acute.
2. Chronic.

In all varieties of endometritis the general health must be thoroughly attended to, and in many instances that will be all that is required, as in the endometritis that occurs during or after the acute exanthemata, where you may have all of the general symptoms of catarrhal inflammation of the lining membrane of the uterus with a greater or less involvement of the neighboring mucous membranes. Still, all of the symptoms will disappear as your patient's general health improves. Many of these patients (and they are usually young girls) do not require a physical examination, much less local treatment. Again, when there is a marked diathesis, as in scrofula, gout, rheumatism, and syphilis, constitutional treatment will effect a cure; at any rate, it is an absolute necessity in connection with the local treatment.

It is a question if the cervical endometrium is ever markedly inflamed without that of the body being more or less involved; but the first heading deals with cases where the cervical endometrium is primarily and principally diseased. In this variety free drainage should be established if it does not already exist. Ordinarily this can be accomplished by the use of steel-branch dilators or graduate dilators, such as those devised by Dr. H. T. Hanks, and it has been stated that this slight operation can be performed, possibly at several sittings, in your office without the use of an anæsthetic, for rarely does the whole cervical canal require dilatation, and in other instances it is very dilatable. I very much doubt it ever being good practice to dilate in your office, even in comparatively simple cases, because you never know the exact condition of the uterus till after you have dilated; and, secondly, it is very difficult to carry out thorough antiseptic precautions in your office, and an additional infection might lead, and in many instances has led, to very serious consequences. Occasionally where there is marked contraction of the external os, crucial incision of the cervix, as recommended by Dr. P. F. Mundé, will be found very beneficial as an adjunct to dilatation; but if there is a marked deposit of cicatricial tissue with nearly complete closure of the external os, especially as in a case similar to the one that I operated on this past summer, where a trachelorrhaphy had been performed a few months before, and the operator had nearly closed the cervical canal (and I am sorry to say that a number of similar cases have come under my observation), it will be necessary to amputate the end of the cervix, for no matter how extensively you dilate these cases, they are almost sure to recontract. In acute cases, before the cervical endometrium has become extensively changed, applications every second

day of Churchill's tincture of iodine to the vaginal portion of the cervix and the upper part of the vagina, followed by tampons thoroughly soaked in glycerin or glycerin to which has been added boric glyceride, boric acid, or ichthyol, and hot ( $110^{\circ}$  to  $120^{\circ}$  F.) douches, and rest in bed, will be all that is necessary to effect a cure in a short time; but in cases that are of longer duration, in addition it will be necessary to thoroughly clean the mucus out of the cervical canal with a curette and make applications of tincture of iodine or carbolic acid, or a mixture of the two or some similar remedy, directly to the cervical endometrium. In chronic cases, where the membrane is extensively hypertrophied and its glands very much involved, the treatment that has just been mentioned will be found of very little, if any, benefit, and it will be necessary to resort to more radical measures. The glands must be thoroughly scraped with a sharp spoon or curette, and, in rare instances, the entire cervical endometrium removed, as has been recommended by Schröder. Caustics have been extensively employed for the cure of this condition. I wish to condemn their use, as mild ones are of no benefit, and severe ones are liable to leave a cicatrix that is of more harm to the patient than the endometritis.

When the whole endometrium is involved the disease will be found more difficult to cure. In the acute form, especially if it is of septic origin, the whole uterus is involved and not infrequently, though it follows parturition, there is so much tumefaction at the internal os that quite an amount of material will be retained in the uterine cavity. Many times, when there is a sudden rise of temperature or arrest of lochia, if an instrument, or preferably the finger, is passed through the internal os, a discharge of retained lochia will follow, proving that obstruction exists in certain cases where apparently the cervix is well dilated, and so demonstrating the necessity of positively ascertaining in every case of severe endometritis the exact condition of the cervical canal. In this class of cases Dr. W. M. Polk, after emptying the uterus, advocates drainage with strips of iodoform gauze, and by so doing I believe he has added an important method of treating certain cases; but, in other instances, I still believe that the method followed in the New York Maternity Hospital, when I was house surgeon (1883), which consisted of thoroughly emptying the uterus of any retained material and following with antiseptic intra-uterine douches of a two-per-cent. solution of carbolic acid from one to three times during the twenty-four hours as long as the uterus remains septic, is the best. In this connection it is very necessary to lay

stress on the importance of discontinuing intra-uterine douches, as well as other local treatment, as soon as the local sepsis has ceased, which can be determined by local examination and not by the constitutional symptoms. In many instances a general sepsis is developed which will cause a high degree of temperature, and many other severe symptoms long after the local disease has disappeared. B. S. Schutz advocates this method of treatment in chronic "suppurative endometritis." He precedes each antiseptic douche with a douche of a three-per-cent. solution of bicarbonate of soda for the purpose of clearing out the accumulated discharges. In a large percentage of cases of acute endometritis following abortion or labor it is only necessary to remove retained material from the uterine cavity and give one copious intra-uterine douche of boiled water or a mild antiseptic solution, after which rest in bed, vaginal douches, and general symptomatic treatment is all that will be required to effect a cure.

In the chronic forms of inflammation affecting the entire endometrium the glands are extensively involved, so there is very little if any tendency to spontaneous recovery, and the ingenuity of many of the brightest minds in the medical profession have been taxed to their utmost to cure the more obstinate varieties. It has been generally believed that a cure could only be effected by removing the diseased part of the endometrium, and so a very large number of astringents and escharotics have been applied in the form of solutions, ointments, bougies, and solid substances. One physician claims to have been the first to use chromic acid, another fuming nitric acid, another chloride of zinc, and so on; but their treatment and results are very much the same. They will remove the diseased glands; but the chances are that they will burn too deep in places, and not destroy the diseased tissue in others. A number of patients have presented themselves to me with marked stenosis of the cervical canal that was undoubtedly the result of the use of caustics. These unfortunate women were much worse than before they first sought medical advice. Many times this condition is extremely difficult to cure, because frequently an ordinary dilatation is shortly followed by recontraction of the cervical canal, and, if this is allowed to persist, tubal disease is sure to follow. Caustics should not be used.

If the disease is at all extensive, astringents alone will do little more than stimulate the process. In fact, unless you first use a curette to remove the mucus, it is a question if they ever come in contact with even the surface of the endometrium, much less the deeper portions of the utricular glands, which are the most important

localities to reach. I have long since discarded their use as a principal factor in the treatment of endometritis.

Undoubtedly the ancients dilated the uterine canal in the treatment of endometritis, and they doubtless used many principles similar to those now followed ; but unquestionably the pioneer of modern times in this particular line was the late J. Marion Sims, who stated in 1866 that "drainage was of the greatest importance in the treatment of this class of cases," and described a stem that he had found very useful in many instances. He used a steel-branch dilator for the cervix, of which many at present in use are only slight unimportant modifications.

To properly treat the chronic varieties of inflammation affecting the entire endometrium, the first and absolutely essential thing to be accomplished is thorough dilatation of the cervical canal, and the different instruments employed to accomplish this are :

I. Tents.

II. Graduated dilators.

III. Steel-branch dilators.

The method :

I. Gradual dilatation.

II. Rapid dilatation.

The sponge tent, or any other kind of a tent that is to remain in the cervical canal for a number of hours, and in many instances depend upon material that it absorbs for its power to dilate, is always dangerous ; not that every patient or a majority are going to be injured, but, no matter how sterile the tent, the secretions are not sterile, and frequently there will be slight sepsis and occasionally a patient will lose her life from acute infection within a few hours after its introduction.

Graduated dilators, as those devised by Peasley or Hanks, are useful ; especially where the canal is very small and it is difficult to introduce a steel-branch dilator, it can be easily accomplished after using two or three of the smaller sizes. Many gynæcologists use them where they wish to treat the case by gradual dilatation. The statement that they exert a piston action, and so possibly force material from the uterus into the Fallopian tubes, is erroneous, for the cervical canal is collapsed before the dilator is passed into it.

Steel-branch dilators are by all means the most effective instruments with which to dilate a cervix. In selecting an instrument care should be taken to see that it will not give at the end that passes through the internal os, for that is the most important part of the

cervical canal to thoroughly dilate. The canal should be dilated slowly, but as extensively as it can be short of lacerating the cervix, and when this point is reached in a given case experience will tell you. As a rule, you notice a very slight abrasion at the external os.

Drainage having been accomplished by thoroughly dilating the cervical canal, the next question that presents is, What shall be the treatment of the interior of the uterus? It should be curetted so as to remove the epithelial layer of the endometrium, having the hard derma containing the cup-shaped extremities of the utricular glands so that they can be thoroughly disinfected; a new epithelial layer free from infection will form in a manner very similar to its formation after parturition, and it is not infrequent for your patient to stop menstruating for a month or two after a thorough curettage. It is difficult to completely remove the entire endometrium with a curette, as its derma is so firmly attached to the muscularis, but it has been done, and the entire uterine cavity has been occluded as the result. I use a sharp curette, because many failures have followed the use of the dull, remembering that the sharp curette is not a cutting instrument, but one that will effectively scrape the softened, diseased epithelial layer of the endometrium. When the derma is reached, a hard grating sound will be produced by the curette. After this the uterine cavity is thoroughly douched with boiled water or a mild antiseptic and its cavity loosely packed with iodoform gauze, which is allowed to remain for twenty-four hours, and the uterus is not repacked. The gauze is to more thoroughly sterilize the endometrium, cause slight uterine contraction, and insure the removal of any particles that may have been loosened by the curette but not removed by the intra-uterine douche. Formerly I left the packing in for a week; later the first gauze was removed at the end of four days, and a second packing at the end of the week. These methods were not followed by as good results as is the case at present.

This work is done under general anæsthesia, with the most thorough antiseptic precautions, and as a rule the patients remain in bed for three days, receiving a hot (110° to 120° F.) vaginal douche each day, which is continued daily for two months after the operation.





